

REMARKS**Claim Rejections Under 35 U.S.C. § 102**

Claims 1, 36 and 38-40 were rejected under 35 U.S.C. § 102(b) as being anticipated by *Sadd et al.* (U.S. Patent Application No. 20020076850). Claims 1, 36 and 38-41 were rejected under 35 U.S.C. § 102(e) as being anticipated by *Mahajani et al.* (U.S. Patent Application No. 20040069990). Applicant respectfully traverses this rejection.

Sadd et al. disclose a semiconductor device structure that has a nitride charge storage layer. The structure includes first oxide layer 20 as the tunnel oxide layer. This layer 20 can be SiO₂ or aluminum oxide. Two nitride layers 30, 50 are formed over the tunnel oxide layer 20 as charge storage layers. A second oxide layer 60 is formed over the second nitride layer 50. As stated in paragraph 0015, this layer is preferably SiO₂ but can also be aluminum oxide. *Sadd et al.*, however, neither teaches nor suggests Applicant's invention as claimed in the amended claims of a nano-laminate gate dielectric composed of oxide-nitride-HfO₂.

Mahajani et al. disclose a thin film transistor. The transistor has a charge storage region 5 that includes a tunneling dielectric 13, a charge storage dielectric 11, and a blocking dielectric 9. *Mahajani et al.* teach that the tunneling and blocking dielectrics 13, 9 can be aluminum or tantalum oxides and the charge storage dielectric can be Ta₂O₅, ZrO₂, or HfO₂ (see paragraph 0019). *Mahajani et al.* not only neither teaches nor suggests Applicant's invention as claimed in the amended claims, they actually teach away from the presently claimed invention.

The present invention as claimed in the amended claims is to an NROM cell that has a nano-laminate gate dielectric composed of oxide – nitride – HfO₂. *Mahajani et al.* teach using a charge storage dielectric of HfO₂. Since, in order to block the leakage of the charge from the storage layer, the blocking dielectric must have different insulating properties than the storage layer and cannot be made of the same material.

Claim Rejections Under 35 U.S.C. § 103

Claims 35, 37 and 41-44 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Sadd et al.* (U.S. Patent Application No. 20020076850). Claims 35, 37 and 42-44 were

rejected under 35 U.S.C. § 103(a) as being unpatentable over *Mahajani et al.* (U.S. Patent Application No. 20040069990). Applicant respectfully traverses this rejection.

It was shown previously that neither *Sadd et al.* nor *Mahajani et al.* teach or suggest Applicant's invention as claimed in the amended claims. In fact, it was shown that *Mahajani et al.* teach away from the presently claimed invention. Therefore, even if it were obvious to combine *Sadd et al.* with *Mahajani et al.*, and Applicant maintains that it is not, the combination does not anticipate the present claims.


CONCLUSION

For the above-cited reasons, Applicant respectfully requests that the Examiner withdraw the final rejection and allow the claims of the present application. If the Examiner has any questions or concerns regarding this application, please contact the undersigned at (612) 312-2211. No new matter has been added and no additional fee is required by this amendment and response.

Respectfully submitted,

Date: _____

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Kenneth W. Bolvin

Reg. No. 34,125

Attorneys for Applicant
Leffert Jay & Polglaze
P.O. Box 581009
Minneapolis, MN 55458-1009
T 612 312-2200
F 612 312-2250